**Polynomial Project**

**Algebra 1**

This project counts as 1 test grade. The project will be broken into two steps. **Step 1 with all the work is due February 12th.** Step 1 will be graded and returned back to each student during class. Students will be able to make revisions on Step 1 before they hand in the final project. **The final project with Step 2 is due February 15th**. **Late projects will be deducted 10 percentage points each day it is late!** Answers **must have** supporting work. Sloppy or unreadable work will not be graded. NOTE: All dimensions are in feet, indicate appropriate units on the answer sheet.

**Step 1. Expressing areas and perimeters as polynomial expressions – due: 2-12-19\_\_\_\_\_\_**

* Use the layout on the back of the project to answer the following questions
* Your work must be clearly numbered, labeled and neat if done on a separate sheet of paper. Answers must be in simplified form.
* All answers are polynomial expressions.

1. Find the area of each room. Record your answers on the answer sheet.
2. Find the perimeter of each room. Record your answers on the answer sheet.
3. Find the total area of the Master Bedroom and the Master Closet.
4. Find the perimeter of the Master Bedroom and the Master Closet.
5. Find the total area of the Bedroom, Closet, and Bathroom.
6. Find the perimeter of the Bedroom, Closet, and Bathroom.
7. Find the area of the whole house.
8. Find the perimeter of the whole house.

**Step 2. Calculating areas and perimeters – due: 2-15-19\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* On a separate sheet of paper work each of the questions below.
* Your work must be clearly numbered, labeled and neat.

1. The perimeter of the kitchen and the perimeter of the dining room are exactly the same. Write an equation to represent that the perimeters are equal.
2. Solve the equation you wrote in #9 for x.
3. Substitute the value you found for x to find the area of each room. Record your answer on the answer sheet.
4. Substitute the value you found for x to find the perimeter of each room. Record your answer on the answer sheet.
5. Substitute the value you found for x to find the area of the whole house.
6. Substitute the value you found for x to find the perimeter of the whole house.
7. You want to put carpet in the Master Bedroom, the Master Closet, the Bedroom, the Closet, and the Living Room. You checked with various stores and found that the best deal was given by a company who will charge you $3.49 per square foot (this includes carpet pad and labor). Calculate the total cost for carpeting these rooms.
8. You want to put vinyl flooring in the Bathroom. You checked with various stores and found that the best deal was given by a company who will charge you $3.79 per square foot (labor included). Calculate the total cost for the vinyl flooring.
9. You want to put hardwood flooring in the Hallway. You checked with various stores and found that the best deal was given by a company who will charge you $5.99 per square foot plus $375 for labor. Calculate the total cost for the hardwood flooring.
10. You want to put ceramic tile flooring in your Kitchen and Dining Room. You checked with various stores and found that the best deal was given by a company who will charge you $3.00 per square foot plus $320 for labor. Calculate the total cost for the ceramic tile flooring.
11. Write a 2 paragraph summary of what you have done while completing this project. Be sure to relate your work to what we have covered in class. (30 point quiz grade)

Grading Rubric:

80% of your grade will be for the accuracy of the work (did you multiply correctly, did you add correctly, did you use the proper units…)

20% of your grade will be for neatness and organization (are your papers in order, is your work clearly shown, can I easily find your answers…)

**-10% each day the project is late**

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_\_\_\_\_\_\_\_\_

Polynomial Project Answer Sheet

*All answers must be recorded in the spaces provided, including the units.* ***Circle all answers.*** *All work must be attached and numbered/labeled appropriately or worked out on this paper. If you run out of space, you may see Miss Luttrell for more papers with space.*

**Step 1: Expressing areas and perimeters as polynomial expressions**

|  |  |  |
| --- | --- | --- |
| Room | Area | Perimeter |
| **Living Room** | 1a) | 2a) |
| **Closet** | 1b) | 2b) |
| **Bedroom** | 1c) | 2c) |
| **Bathroom** | 1d) | 2d) |
| **Master Bedroom** | 1e) | 2e) |
| **Master closet** | 1f) | 2f) |
| **Kitchen** | 1g) | 2g) |
| **Dining Room** | 1h) | 2h) |
| **Hallway** | 1i) | 2i) |
| **Master Bedroom and**  **Master Closet** | 3) | 4) |
| **Bedroom, Closet, and Bathroom** | 5) | 6) |
| **Whole House** | 7) | 8) |

**Step 2: Calculating Areas and Perimeters**

9) Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10) Solution to equation from #9: x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solving for Area and Perimeter:

|  |  |  |
| --- | --- | --- |
| Room | Area | Perimeter |
| **Living Room** | 11a) | 12a) |
| **Closet** | 11b) | 12b) |
| **Bedroom** | 11c) | 12c) |
| **Bathroom** | 11d) | 12d) |
| **Master Bedroom** | 11e) | 12e) |
| **Master closet** | 11f) | 12f) |
| **Kitchen** | 11g) | 12g) |
| **Dining Room** | 11h) | 12h) |
| **Hallway** | 11i) | 12i) |
| **Whole House** | 13) | 14) |

15) Total cost for carpeting:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16) Total cost for vinyl flooring:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17) Total cost for hardwood flooring:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18) Total cost for ceramic tile flooring:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­\_\_\_\_

**6x**

**2x**

**2x**

**2x - 1**

**5x + 3**

**5x + 3**

**5x + 3**

**6x - 3**

**Closet**

**4x + 2**

**11x - 5**

**4x + 2**

**3x - 1**

**4x**

**Living Room**

**Hallway**

**2x + 2**

**4x + 2**

**3x - 5**

**3x - 5**

**3x - 6**

**Dining Room**

**Kitchen**

**Master Closet**

**Master Bedroom**

**Bathroom**

**Bedroom**